

ESSAY
ON
HARMONY OF SCRIPTURE
AND
SCIENCE.

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ROSTOCK: ADLER'S HEIRS.
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The Phenomena of natural Science and the materials of mental philosophy are within the reach of man's accurate knowledge in these, therefore there need be no error, it is when we endeavour to combine them into systems that error arises.

A true system defines the relation of all the parts to the whole, and the relation of that whole to other systems. That result has never yet been reached in any of the subjects of human enquiry and thought.

All that men have been able to accomplish is to collect materials, to observe their nature, mutual relations and dependence, and to arrange their observations into a system, conscious that further developments of knowledge will modify and correct that system.

Astronomy, has not yet arrived at a true system, in the earlier ages, men were accurate observers of natural phenomena, they do not appear to have formed an astronomical system.

We have no evidence that the Chaldeans did, so far as we may conjecture from the paucity of

notices, which have remained of their astronomical views they were limited to a careful collection of phenomena; the same may be remarked of the Egyptians, an investigation of their mythology, shows no pretensions; to an astronomical system, it was founded on natural phenomena.

Scientific systems of Astronomy may be said to have originated with the Greeks, and that, in any thing worth calling the name, after the Canon of Old Testament Scripture had closed.

Those who attribute erroneous systems of Science to the Bible do so in utter disregard of the fact that the Bible does not profess to state truth Systematically.

It refers to scientific phenomena, but does not collect those phenomena into a system. The Bible is the only book that contains words suggestive of deeper truths than the mere phenomena. This remarkable fact is not because it is the language of the Bible the Hebraist will ascertain, it is the peculiarity of the Hebrew diction as such.

All human language was framed before Scientific systems were invented; men must have had words to describe phenomena before they could have been able to constitute in a system those phenomena.

Scientific language is therefore of necessity the language of phenomena, it describes things as they appear, and not as they really are.

Our scientific books on Astronomy use such terms as sunrise, sunset, the zenith distance of a star, meridian altitude, although these terms are not

strictly scientific. The fact is better ones could not be invented to describe, the exact reality would so burden, or make so cumbrous scientific language that it would be quite useless.

If this, then, be so of human language, the Bible must employ the same language, 'for it is God speaking to human beings in human language. Although the Bible was not written to teach Scientific truth so as to collect it into a system, it declares in ordinary language natural phenomena with unerring accuracy. Let us glance at the Scriptural statements and suggestions respecting

Astronomy:

— and primarily —

The Original of all Things.

We must however as a preliminary, distinguish between Scientific Conceptions which are ranging from age to age and true Science, in other words, the understanding and application of the irreversible laws of the Creator, which are unchangeable.

We have a notable instance of this in relation to Geology, according to the statement of a French author, who mentions that in 1806, the French institute numbered eighty geological systems, all hostile to the Mosaic record, not one of which has stood the test of time and research.

All real Science, being true, is like God's word unchangeable, and therefore, we are not surprised to

find men, with limited understanding and finite reasoning power, compared with the Creator of all things constrained to confess their ignorance by fresh discoveries in Science eventually confirming those truths of Revelation, which at first they were supposed to contradict.

Let us consider some illustrations of this set forth in Holy Scriptures. The grand or sublime speech which Moses records respecting the original of all things is, that the whole universe came into existence, as a perfect and well organized whole, by the volition of the Deity, who has ever since been upholding and ruling it.

The Bible only gives us the true account of the origin of all things.

It tells us that God is from everlasting before ever the Earth was, or Creation had any existence.

Micah V, 2, „Whose goings forth have been from of old (מִקֶּדֶם, from before all things)“, Prov. VIII, 23 „I was set up from Everlasting, from the beginning, or ever the Earth was“, עֶלְיֹם, everlasting, used absolutely, has a similar sense to the word Eternity. רֵאשִׁית, beginning, declares a commencement of all thing „from the beginning“ as used here declares the Existence of that Divine Being before any created thing had any Existence.

מִקְדָּמֵי־אֲדָמָה, from the originals of the Earth indicating a long protracted Existence of this Earth, coeval with the Stars.

Nothing but the modern discovery of the micros-

cope has enabled man to learn the action of vapour upon the respiratory organs and secretory vessels in the leaves of plants which they inhale from the air for their nourishment, this is an instance of scientific accuracy with which Scripture is written, as we find reference to this interesting discovery in the most ancient human writings, the book of Job „There is hope of a tree, if it be cut down that it will sprout again, and that the tender branch thereof will not cease. Though the root thereof was cold in the Earth, and the stock thereof die in the ground, yet through the scent of water, it will bud and bring forth boughs like a plant.“

What uninspired man ever had certain knowledge of the real shape of this world, which we inhabit until a few Centuries ago?

The Hindoo legend of the tortoise and the Elephant was the limit of man's skill during several thousand years before being able to decide what now appears to us so simple and so plain. It is true that the Pythagoreans, according to the report of Philolaus of Croton, taught the progressive movement of a non rotating Earth, and that Aristarchus of Samos, and Seleucus of Babylon, are said to have taught that the Earth not only rotated on its axis, but also moved round the Sun, but these ideas were so in advance of the age, that they were rejected by the greater names of Plato and Aristotle, who imagined that the Earth neither rotated on its axis, nor advanced in space, but that fixed to one central point,

it oscillated, like a half filled balloon, from side to side, Eratosthenes, the most celebrated philosopher of the Alexandrian School, believed that there was an „External sea“ surrounding all Continents; but the world required 2000 years more Education before it could receive the truth as set forth by Copernicus, yet Job was enabled by the inspiration of God to declare „He stretcheth out the North over the empty place, and hangeth the Earth upon nothing;“ thereby stating a scientific truth 3000 years before the ingenuity of man had enabled him to discover it. The Earth is not resting upon any thing, and yet it is suspended in space, from these grand thought of the origin of all things and of the sustaining power of God let us now turn to the Bible testimony respecting the Universe.

Heaven and Earth are an Organized Whole.

Heaven and Earth are a host צְבָא. This word is applied to a well organized army, to a well arranged host, and in another form צְבִי, to a Roe for its beauty Deut XII, 15 (et alia); to the beauty of the branch of the Lord, to the Crown of the Lord as a Crown of Glory Isaiah XXVIII, 1, 5.

Organization and beauty are then the characteristics of the host of Heaven. Isaiah tells us „He meted out heaven with a span, here we have one of the most wonderful conjectures of modern science, the application of Keplers law to the starry worlds, anticipated by a Hebrew Prophet nearly 7 Centuries

before the Christian Era or nearly 3000 years ago. We cannot suppose that the Prophet was acquainted with the astronomical fact that the Stars are so arranged in the depths of space, that each one has his place with reference to all the others, He that inspired Isaiah know it, and so overruled his diction that it agrees with all the discoveries of science.

The spaces between the Stars are filled with an aether similar to our Atmosphere.

There is great significancy in the words „God called the firmament Heaven“. That firmament is the Atmosphere around this Earth „it was made“ (not created) on the second day.

No one in our present state can ascend above our atmosphere. We have also little evidence, from the known phenomena of astronomy, of the nature of the aether or upper heavens.

Regarding our own atmosphere we are able to acquaint ourselves concerning the composition, its intimate connexion with the Earth, its action upon all Earthly phenomena, and the penetrating association, with the organization of vegetables and the bodily power of animals and men. In calling our atmosphere by the same name as the upper aether God suggested the similarity between the two. Analogy is not to be confounded with formal correspondence, and it is in this distinction that the suggestions of Scripture are so highly to be appreciated.

As Science multiplies her discoveries in proportion, the suggestions of Divine revelation supply a

great assistance to their proper consideration. Without binding or retarding in the least the investigations of Science. Who ever, previous to the time of Galileo, imagined that the air around us possessed the property of Weight? yet we find the statement in the Scriptures God understandeth the way thereof to make „the Weight for the Winds“, and „He weigheth the waters by measure“ God has given an atmosphere to the Earth, possessing a certain gravity exacted suited to the fauna and flora of the present age, is the cause in his hand of preserving animal and vegetable life throughout all Creation; for by this means blood circulates in the veins of the one, and juices in the tubes of the other, without this pressure of the atmosphere there could be no respiration, and the elasticity of the particles of the air, without this superincumbent pressure would rupture the vessels in which they are contained, and destroy both kinds of life so admirably contured is this Weight of the winds by Him who doeth all things well, that we find in the mean that it is neither too light to prevent the undue Expansion of animal and vegetable tubes, nor too heavy to compress them to the injury of their health and life.

The philological meaning of the name שָׁמַיִם heaven, is rather uncertain some conjecture the meaning is water there being filled with aqueous vapour, but this is not highly satisfactory. The atmosphere around this Earth has most wonderful power in arranging and ordering all all terrestrial things, even influencing the

moral relations of men. I conjecture that the progress of Science will discover more minutely the similarity between the upper aether and the atmosphere of our Earth. There are other expressions of a like suggestive character without trying one self to any particular system of Science (for instance) קִנָּוּ, the sky the clouds, small dust, from קִנָּוּ, to beat small.

In these quotations we have the analogy between the atmosphere and the aether.

This idea of disposing and energizing may yet conduct to important results in the discovery of that higher law of which gravitation is a subordinate one.

The Stars.

Canst thou bind the sweet influences of Pleiades? was a question put to Iob what is the meaning of this influence of the Pleiades some have considered that there is a reference to the influence which the Stars were formerly supposed to have upon the Seasons, forgetful of the statement that Moses declared that God had appointed the Sun and Moon as the „two great lights for signs and for Seasons, for days and years“, and until the Science of Astronomy had made the very great advance which it has in our day, partly through the improvement in the Telescope, it was impossible for man to imagine what this „influence“ could mean.

Recently this has been explained by one of the most wonderful discoveries in that department of Science. After infinite labour the revolution of the

whole solar system around some central sun is recognized as a scientific truth, just as much as the revolution of the Earth in its orbit.

„The influence“ of this Central Sun upon our Solar System must be proportionally as great as that of the Sun upon the Earth and the Planets, according to the law of gravitation. A distinguished Russian astronomer, who has for years devoted his attention to the Subject, has determined the „influence“ which the Pleiades have upon the Earth as they form central group of our whole astral system, including the milky way, though exclusive it is believed, of the most distant nebula; and that Alcyone or η Tauri, as it is named by Astronomers, is the star of this Group which appears to be most probably the true Central Sun. The number of the Stars is said to be so great that man could not number them Iob mentions them in beautiful poetical style. Their scientific suggestions are as yet obscure.

Terrestrial Phenomena.

The original condition of the Earth was that of order and beauty, it had the same perfectness as the Starry host. In that condition it had its light, its air, its productions its inhabitants in the most perfect order, it was אֶרֶץ , viz: a running thing performing all its appointed motions as an integral part of the Creation.

It did not continue perfect. Moses describes a ruined condition which took place in an antiquity so

remote as to deserve the name of עָלָם, everlasting „And the Earth was thohu and bohū“. There words do not describe an original chaos but a subsequent ruin. We arrive at another step in this inquiry that there have been fore-Adamic ages distinct periods.

To this harmonizes passages in the writings of St. Paul.

He mentions (πρὸ χρόνων αἰωνίων) before the everlasting times again: „In hope of eternal life which God that cannot lie, promised (πρὸ χρόνων αἰωνίων) before the everlasting ages.

Let us return to the Scientific part of this question and powder what light is throun on the discoveries of Geology. Scripture states facts and phenomena, not systems. This is prominently so with its suggestive geological hints it tells us that the original condition of the Earth was in beautiful harmony and order, similar to what we see in the Astral system. It tells us that the Earth became ruined, and that it continued for countless ages in a state of ruin, it makes known to us that that long period was divided into various days, or dispensations, everlasting times, during which God was morally dealing with responsible beings.

But we are not informed of the especial characteristics of those various periods.

It thus leaves abundant room for the discoveries, which geology can ever unfold.

We read in the book of Psalms of Snow being

compared to wool „He grieth Snow like wool“. Modern discovery has shown there is a deeper meaning in this Expression than was formerly supposed. Hence the Jews very naturally as in the Targum and Rabbi Rimchi considered the similarity to refer to colour, Snow and wool being in this respect alike.

The ancients used to call Snow „woolly water“. (Eustathius in Dionys.) And Martial the Roman poet, gives it the name of „densum vellus aquarum“*) a thick fleece of waters.

But the comparison refers we cannot doubt to the admirable manner in which the Creator of all things has ordered that Snow falling upon the Earth should cover it, and warm it, and cause it to fructify for the use of man. Snow maintains its internal heat exactly in the same way as wool on the Scheep's back; the minute fibres entangle the air, and, forbidding its escape, prevent the introduction of cold.

But we stated that there is abundant scope for all geological discoveries and that an harmony will be found with this department of Science and revelation.

If the generally received notion be correct, that the animals and Plants of one period all perished, and that a different as well as a new race succeeded them; or if it be proved that there has been one inconceivably long period, with gradual progression upwards either theory harmonizes with the sublime statement „The Earth was ruined“.

*) Epigram, lib. 4. Ep. 3.

Dig where we will through the Earth's crust, and we are every where met with the breaking up of a former world.

Suppose it should be proved that in some or all of the geological periods, beings were on this world exactly analogous to man we have already seen from the Bible there have been responsible and intelligent beings on this Earth and that for countless ages.

The statement of a pre-Adamic ruin in this world leaves the Scientific and pious Geologian perfectly free in his researches. Further should it be proved that races of animals identical with our present ones once existed on this Earth it would not militate against the Mosaic statement „Leth the Earth bring forth after his kind“.

On the contrary these words seem to me to imply that seminally those Creatures had been in the Earth awaiting the Divine mandate to come forth.

Here are twee suggestions which Science could never have solved.

One: That during those countless ages God has been dealing with moral and responsible beings.

The other: That there has been a beginning anterior to anything that Science could ever discover. Science can go down to the igneous rocks, but she has no possibility of telling us the condition of those rocks before their fusion.

We have already seen the Bible teaches us concerning this Earth

α. The original creation.

- β. The fall of this Earth.
- γ. The restoration of the Earth to its present condition.

The Mosaic narrative of the 6 days work, is introduced with majestic brevity „And God said let there be light and there was light“ here we have represented the restoration of light before that of the atmosphere.

This harmonizes with science. The aether is a receptacle of the sun's light.

It is enough for my present purpose to show that there is no scientific difficulty in believing that the aether surrounding the Earth was withhold from transmitting light. The light is called day as distinguished from the darkness, the evening and the morning were the first day. Whether the day means 24 Hours is not stated it is this suggestive indefiniteness which constitutes the great excellence of Biblical Statements.

The second day's work is given at greater length „And God said let there be a firmament and let it divide the waters from the waters, and God made the firmament, and divided the waters which were under the firmament, from the waters which were above the firmament: and it was so &c.“

The Latin word firmament and the Greek word στερέωμα have induced many critics to charge Moses with asserting that the atmosphere around this Earth, or the heavenly arch above it, was a soled thing like a cylinder, with perforations in it but there is no

trace of it in the Bible. If we understand by solid, matter which so occupies space as that other matter cannot occupy the same space at the same time, then the atmosphere is solid, as may be proved by endeavouring to force a piston into a Cylinder which is stopped at one end.

But if we mean by solid that which is not fluid, then there is no such intimation in the Hebrew word רָקִיעַ firmament or expanse רָקַע is to beat out, and so to attenuate, this idea applies well to the atmosphere condensation and solidity (as opposed to fluidity) are properties of the constituent parts of the atmosphere.

The relation of the Water to the atmosphere is strikingly described. The firmament was to divide the upper waters from the lower, if we take the phraseology in its phenomenal application, just as we do sun rise and sun set, then the words apply only to the great mass of waters which is always held in suspension over our head in the firmament and to the waters of the Ocean underneath the firmament.

If more accurately we investigate the phrase, the aqueous vapours are all above some portion of the firmament. If we divide the atmosphere into an imaginary series of strata, of varying density, then we may truly say that the various strata of aqueous vapour are above and lying upon corresponding strata in the atmosphere and that however high we may ascend, we have never yet discovered an absoluteness of dryness in the atmosphere. Although this is strictly true the simpler view is to regard the passage as

describing phenomena up to this period it would appear that the waters still covered the highest mountains, and that another feat was needed to present or produce our present mountain ranges.

That the Mountains do not always retain their places is evident from Scientific discovery. They oscillate as really, though not as rapidly, as the rise and fall of the tide. One violent Earthquake in South America 30 years since elevated a considerable portion of the Andes. Other mountains bear the marks of depression and as with mountains so with the plains, they also have elevations and depressions. All the Mountain ranges in the world have the marks of having been once submerged for any thing to the contrary they may have been so several times for any evidence that Science can bring to the contrary.

Moses speaks of two great creations when they were so, when darkness was upon the face of the deep, the surface of the Earth seems to have been one mass of Waters. The emergence of the mountain Systems above those Waters was accomplished on the third day.

„Which removeth the mountains“ which overturneth them in his anger these expressions are the result of the deep thinkings of profound observers. They must often have thought upon the aqueous rocky sides of the mountains and upon their dislocations. How forcible and accurate is his poetic description of the Earthquake.

„Which shaketh the Earth out of her place, and the pillars thereof tremble.

The same observant eye for natural phenomena caused him to observe the action of water and other agencies upon mountains and rocks.

„And surely the mountain falling cometh to nought and the rock is removed out of his place. The Waters wear the stones.“

He observed the rock fissures for the beds of Rivers and the upheaval of mineral Strata which enable us to know the treasures that are bind in the Earth:

„He cutteth out Rivers among the Rocks His eye seeth every precious thing.“

All these statements are in beautiful harmony, both with natural phenomena and with the researches of Science. The Psalmist states concerning the mountains. „At they rebuke they fled; at the Voice of thy thunder they hasted away;

The mountains ascend and the Valleys descend into the place which thou hast founded for them.“

The agency here refered to is the internal thunder, the name in all volcanic regions for the noise of Earthquakes. It is stated that God gave names to this new state of things „God called the dry Land Earth and the gathering together of the Water called he Seas.“

We have here a Divine application, to the surface of the ground of the name עֶדֶן which belongs

to the whole globe. The reason is not stated, and we are left to consider the analogies of the case.

It might be to suggest that the Earth and not the Sea was for the habitation of man, but this might be considered a superficial reason.

As the philological meaning of the word is running, it was more probably intended to suggest the ceaseless change that is going on in the dry land. The Mountain streams, the great Rivers the action of rain and frost, and even the operations of vegetation, keep the dry land in continual change and displacement.

The philological meaning of the word Seas is substantially as that for day יום, the Sea, and יָם, the day come from the same root הָיָה, to agitate.

Cearless agitation characterizes the Sea.

There is an important suggestion in the plural „Let the Waters under the heaven be gathered together unto one place“ one grand earth encompassing Ocean, one would have thought it ought to have had one name (l. c.) a singular name.

But to us the Ocean is known as a collection of Seas of very varied Character; a plural name is therefore given to the one collection of Waters. Every days research in physical geography confirm the beautiful propriety of this distinction. Each sea has its distinctive agency in the organism of land and water, making the multiplicity of seas one harmonious whole. The more minutely the Divine word is examined and carefully compared, it is thus more

and more hought into harmony with the increasing light of true Science. We find on the third day also the Earth hought forth the green herb and the trees. As a generic term nothing could be more simple or more comprehensive. All that we find here is that the vegetable world is divisible into various kind, which are so distinct, that one does not pass over into the other: grass, for Example could not be cultivated into a Cedar tree. The fourth day was ushered in with another Divine feat „Let there be light on the firmament of the Heavens“ and it is then added „And God made two great lights“.

It is the same language that is applied to the firmament.

It implies a complex construction out of pre-existing materials how truly applicable to both! The work of the fifth day.

First life in the water.

The gradation is upward to the most perfect.

It is remarkable that the Scriptures never speak of vegetable life this is another example of the Scientific accuracy of Scripture.

It distinguishes clearly between organization and life.

The word to express a living animal is *nephech chayah*.

בָּשָׂר is properly the bodily framework and *chayah* the living soul that inhabits it and animates it. Neither word is ever applied to vegetable organization.

It is then added „God created great whales, and

every living creature that moveth which the waters brought forth abundantly after their kind and every winged fowl after his kind“.

„After his kind“, here is the distinction of classes.

The same observations will apply as in the case of the vegetable.

The most ancient monuments attest the unchangeableness of Genera. Domesticated animals may be greatly modified, but no human cultivation has ever made Horses out of Sheep. Climatic influences act much on Animals in producing several species of the same genus. But here also the power is a limited one, it never changes a beast into a bird, nor one animal into another generically distinct. Those who have examined the nature and character of Insects assert great generic charges. It is for however from being proved. They are still within a limited range, for example no one ever saw a butterfly transformed into a hornet.

The living creatures are said to have been created, the same is not said of land animals. I think the reason to be that creation implies the perfection of its own kind. That the aquatic animals have within themselves:

The Land animals have not, for man is their perfection.

The terrestrial animals are divided into beasts cattle and creeping things all called living creatures that ancient classification suits man at the present day.

We have added nothing to our list of domestic

animals. Wit all mans power ever nature his limits are defined.

Man may tame a lion, but he will never be used for purposes of agriculture.

Thus rapidly was the Earth restored and the Earth was prepared for its creature Lord.

We have thus briefly surveyed the origin of all things, of the fall and renovation of this Earth, a narrative not only in harmony with true Science, but it is such a one as the uninspired human mind never could have concerned.

The book of nature and the book of Revelation equally lie open to our inspection we are endowed with faculties by which we can interpret the one and He has given us His Spirit to enable us to comprehend the other.

By making Science a handmaid to religion and not the reverse as some are disposed to do. We have in reality a new Revelation and when we meditate upon the great events which they proclaim, the mighty revolutions which they indicate the wrecks of successive creations which they display, and the immeasurable Cycles of their Chronology, the period of mans tenancy of Earth shrinks into nothing; his most ancient kingdoms are but of yesterday; the gorgeous temples of Egypt and the palaces of Assyria sink in to insignificance beside the mighty Sarcophagi of the fossil dead.

Let us remember that Revelation and Science

are both beams of or from the same light, the same Eternal truth.

Scripture presents no bar to the most comprehensive and searching investigation on the part of those who gladly seek the harmony which exists between His word and his works.

Science has a foundation and so has religion let them unite their foundations, and the basis will be broader and they will be two compartments of one great fabric reared to the glory of God.

It should be borne in mind that all subjects reveal themselves to us according to the mental mood in which they are contemplated it is the same in Nature as in Philosophy. Shew a beautiful Landscape to a man whose mind is distracted with care, and he can see no charm in the picture; but let the same man gaze upon it when in a happier mental mood, and he may be entranced enraptured with its attractions. So in reference to the Bible: if men undertake to peruse it in a captious spirit, and for subversive purposes, it is impossible that they can comprehend and appreciate its teachings; but if with reverence they approach it, and study it unprejudicially, they will find that the Book will reveal aspects the most glorious and suggestive.

The Bible in to us what our mental mood is to it. Hence it is in great measure, that we account for the fact of so many interpretations of the Book: could all men read it in precisely the same mental

mood, all would see it in the same aspect, and construe it in the same manner.

Let the Christian Student pursue his inquiries to the Extent of his time and powers. The Book can never be exhausted. The most Erudite have but crossed the threshold of the magnificent temple.

As in nature so in Revelation:

The materials of every Steam Engine, telegraph, microscope, and other mechanical and Scientific contrivances, have been lying for countless ages under the dust of the Earth undisturbed, until a comparatively recent date.

The lenses by which is now revealed the glory of invisible worlds might have been appropriated to the same purposes in the days of Adam.

The metal which our contemporaries have transformed into gigantic locomotives is not superior to that which was used in the eldest antiquity; and the water which flowed in Eden might have been converted into Steam as powerful as ever propelled a modern Engine. But these wonders were unknown their developement was the triumph of a later genius. And what may yet be fashioned out of Nature, no sagacity can prognosticate. So in reference to Revelation generations yet unborn will group around its pages and gather from them more sublime and radiant truths than those which have flashed on our intellect and cheered our heart. From the Harp of the Hebrew bards, they will hear more elevating melody, than ever Charmed our Spirits, and in the living words of the Divine man

